

**IN THE SPECIFICATION:**

After the title on page 1 please add the following paragraph.

This application is a divisional of U.S. Patent Application Serial No. 09/946,898 filed September 5, 2001, which claims priority to the Japanese Patent applications P2000-269298, P2000-269274, and P2000-269261, each of which were filed on September 5, 2000, and to Japanese Patent Application P2001-244163 filed on August 10, 2001, all of the aforesaid applications being expressly incorporated by reference in their respective entireties to the extent permitted by law.

Please amend the first full paragraph of page 2 which continues to page 3 as follows:

On the contrary, there ~~have~~ has been known a method of forming a crystallized silicon thin film by depositing a source gas obtained by mixing hydrogen and SiF<sub>4</sub> to silane gas on a substrate in accordance with a low-pressure CVD process or a plasma CVD process, and a method of forming a crystallized silicon thin film by forming an amorphous silicon thin film as a precursor on a substrate and crystallizing the amorphous silicon thin film. In the former deposition method in which crystallization of silicon proceeds along with deposition of the silicon thin film, since the substrate temperature is required to be kept at a relatively high temperature, more specifically, 600°C or more, the substrate must be made from an expensive material withstanding a high temperature such as ~~quarts~~ quartz. In this method, the use of an inexpensive glass substrate may give rise to a problem that the substrate may be deformed or distorted because of its poor heat resistance. With respect to the latter method, as a process of crystallizing an amorphous silicon thin film formed on a substrate, there has been known a solid-phase growth process of annealing the substrate, on which the amorphous silicon thin film has been formed, for a long time (for example, 20 hr). Such an annealing process, however, has a problem that since it takes a long time, the practical utility is poor and also the production cost is

raised. To solve these problems, there has been actively studied and developed a method of crystallizing a non-single crystal thin film by irradiation of laser beams emitted from an excimer laser.

Please amend the first full paragraph on page 6 as follows:

To solve the above-described problems, the present inventors have ~~earnestly studies, and~~ found that one of the causes of obstructing the enlargement of sizes of crystal grains in a polycrystalline thin film is dependent on a the manner of irradiating the thin film with laser beams, and eventually created an innovative semiconductor thin film quite different from a the related art polycrystalline thin film and a fabrication thereof. More specifically, the present inventors have found that a crystallized semiconductor thin film can be formed by crystallizing a non-single crystal thin film by laser irradiation under irradiation conditions such that polycrystalline grains aligned in an approximately regular pattern are formed on the thin film, and heat-treating the thin film with the surface state having projections kept as it is, thereby promoting crystallization of the thin film.

Please amend the second full paragraph of page 10, which continues on page 11, as follows:

The micro-projections on the semiconductor thin film according to the present invention are portions where boundaries of polycrystalline grains in the polycrystalline thin film, formed during fabrication steps, collide with and ~~overlapped to~~ overlap each other. Such micro-projections can be observed by a microscopic photograph as will be described later. The height of each micro-projection may be in a range of 20 nm or less, preferably, 10 nm or less, more preferably, 5 nm or less; the diameter of each micro-projection may be in a range of 0.1  $\mu\text{m}$  or

less, preferably, 0.05  $\mu\text{m}$  or less; and a radius of curvature of each micro-projection may be in a range of 60 nm or more, preferably, 180 nm or more, more preferably, 250 nm or more. The density of micro-projections is in a range of  $1 \times 10^{10}$  pieces/ $\text{cm}^2$  or less, preferably,  $1 \times 10^9$  pieces/ $\text{cm}^2$  or less, more preferably,  $5 \times 10^8$  pieces/ $\text{cm}^2$  or less. The size of a single crystal region may be in a range of  $1 \times 10^{-8}$   $\text{cm}^2$  or more, preferably,  $1 \times 10^{-7}$   $\text{cm}^2$  or more. The single crystal region is not required to be formed on the entire surface of an insulating base but may be present on part of a polycrystalline thin film.